

Contents

Part I Univariate and Multivariate Robust Methods

- 1 **Multivariate Median** 3
Hannu Oja
- 2 **Depth Statistics** 17
Karl Mosler
- 3 **Multivariate Extremes: A Conditional Quantile Approach** 35
Marie-Françoise Barme-Delcroix
- 4 **High-Breakdown Estimators of Multivariate Location and Scatter** . 49
Peter Rousseeuw and Mia Hubert
- 5 **Upper and Lower Bounds for Breakdown Points** 67
Christine H. Müller
- 6 **The Concept of α -Outliers in Structured Data Situations** 85
Sonja Kuhnt and André Rehage
- 7 **Multivariate Outlier Identification Based on Robust Estimators
of Location and Scatter** 103
Claudia Becker, Steffen Liebscher, and Thomas Kirschstein
- 8 **Robustness for Compositional Data** 117
Peter Filzmoser and Karel Hron

Part II Regression and Time Series Analysis

- 9 **Least Squares Estimation in High Dimensional Sparse
Heteroscedastic Models** 135
Holger Dette and Jens Wagerer

10 Bayesian Smoothing, Shrinkage and Variable Selection in Hazard Regression	149
Susanne Konrath, Ludwig Fahrmeir, and Thomas Kneib	
11 Robust Change Point Analysis	171
Marie Hušková	
12 Robust Signal Extraction from Time Series in Real Time	191
Matthias Borowski, Roland Fried, and Michael Imhoff	
13 Robustness in Time Series: Robust Frequency Domain Analysis	207
Bernhard Spangl and Rudolf Dutter	
14 Robustness in Statistical Forecasting	225
Yuriy Kharin	
15 Finding Outliers in Linear and Nonlinear Time Series	243
Pedro Galeano and Daniel Peña	
Part III Complex Data Structures	
16 Qualitative Robustness of Bootstrap Approximations for Kernel Based Methods	263
Andreas Christmann, Matías Salibián-Barrera, and Stefan Van Aelst	
17 Some Machine Learning Approaches to the Analysis of Temporal Data	279
Katharina Morik	
18 Correlation, Tail Dependence and Diversification	301
Dietmar Pfeifer	
19 Evidence for Alternative Hypotheses	315
Stephan Morgenthaler and Robert G. Staudte	
20 Concepts and a Case Study for a Flexible Class of Graphical Markov Models	331
Nanny Wermuth and David R. Cox	
21 Data Mining in Pharmacoepidemiological Databases	351
Marc Suling, Robert Weber, and Iris Pigeot	
22 Meta-Analysis of Trials with Binary Outcomes	365
Jürgen Wellmann	